

CLAIMS

1. Process for the preparation of melamine, characterized by a first mixing step  
5 in which at least two melamine-containing flows, originating from at least two different processes for the preparation of melamine, are brought into contact with each other, with a mixture being formed.
2. Process according to claim 1, in which at least one melamine-containing flow contains gaseous and/or liquid melamine, and which comprises a cooling step,  
10 during or after the first mixing step, in which the mixture is cooled to a temperature below 250°C.
3. Process according to claim 2, in which the cooling step is carried out by bringing the mixture into contact with an aqueous phase.
4. Process according to claim 2, in which at least one melamine-containing flow contains water as the continuous phase and in which the cooling step is  
15 carried out during the mixing step by supplying the at least one melamine-containing flow which contains water as the continuous phase.
5. Process according to claim 2, in which the cooling step is carried out by bringing the mixture into contact with gaseous and/or liquid ammonia.
6. Process according to any one of claims 1-5, in which at least one melamine-  
20 containing flow contains melamine from a low-pressure gas-phase process for the preparation of melamine and at least one melamine-containing flow contains melamine from a high-pressure liquid-phase process for the preparation of melamine.
7. Process according to claim 1, comprising a second mixing step, during or after  
25 the first mixing step, in which the mixture is brought into contact with an aqueous phase, followed by a crystallization step, in which the mixture is cooled by at least 5°C, with solid melamine being formed, followed by a separation step, in which the solid melamine is isolated from the mixture.
8. Process according to claim 7, in which virtually all the melamine is dissolved in  
30 a dissolving step during or after the second mixing step and prior to the crystallization step with the aid of heating and/or the addition of an aqueous flow.
9. Process according to claim 1, in which at least one melamine-containing flow contains water as the continuous phase, in which the mixture after the first  
35 mixing step is subjected to a crystallization step, in which the mixture is cooled

by at least 5°C, with solid melamine being formed, followed by a separation step, in which the solid melamine is isolated from the mixture.

10. Process according to claim 9, in which the melamine-containing flow which contains water as the continuous phase contains melamine originating from a low-pressure gas-phase process and is saturated to between 70% and 110% with melamine.
11. Process according to any one of claims 7-10, in which at least one melamine-containing flow contains melamine from a low-pressure gas-phase process for the preparation of melamine and at least one melamine-containing flow contains melamine from a high-pressure liquid-phase process for the preparation of melamine.
12. Process according to claim 8, in which the mixture is subjected to a purification step after the dissolving step and prior to the crystallization step, this purification step comprising
- a treatment with  $\text{NH}_3$  at a pressure between 1 MPa and 20 MPa and a temperature between 100°C and 250°C, and
  - optionally an adsorption step and/or a filtration step.
13. Process according to any one of claims 7-12, in which the mixture in the crystallization step is cooled to a temperature between 100°C and 25°C.